ECONOMIC COMMENTARY

Alberta's Labour Productivity Declined in 2016

July 20, 2017

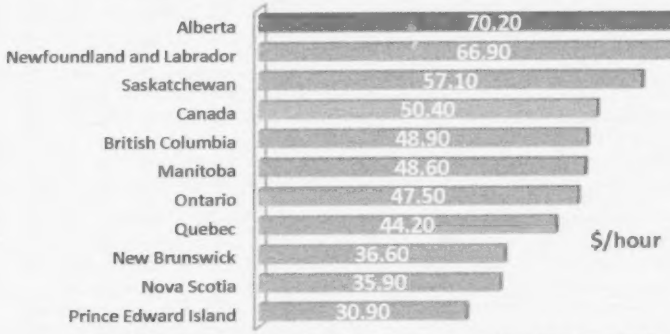
Highlights:

The 2015/2016 recession and the Fort Mc Murray forest fires caused Alberta's labour productivity to decline again in 2016 as companies saw output tumble that year. As a result, the 5-year productivity growth rate fell to an increase of only 0.5% per year between 2011 and 2016.

Alberta Government

According to Statistics Canada, Alberta continues to have the highest labour productivity in the country. In 2016, labour productivity in Alberta's business sector[1] was $70.20 per hour, 39% higher than the Canadian average of $50.40 per hour. Newfoundland and Labrador had the second highest productivity level at $66.90 per hour, followed by Saskatchewan at $57.10. The high productivity levels in these three provinces are mainly the result of their large and highly productive oil and gas extraction sectors.

Business Sector Productivity of Labour - 2016
(Real GDP per Hour Worked, in 2007 constant dollars)



Source: Statistics Canada – Cansim Table 383-0033 (business sector excluding private households)

In Alberta, labour productivity came to a standstill between 2000 and 2009. This was primarily the result of productivity in Alberta's largest sector, mining and oil and gas, falling sharply during that period. Following the "great recession" of 2009, productivity grew strongly between 2009 and 2014 as most sectors, including mining and oil and gas, saw their productivity levels rise. However, the 2015/2016 recession caused a large 3.4% drop in labour productivity in 2015 followed by a 1.1% decline in 2016. Companies saw output fall sharply in 2016 as a result of the recession as well as the Fort Mc Murray forest fires. Business sector GDP (or output) fell 5.5% in 2016 and hours worked fell 4.4% resulting in a 1.1% drop in labour productivity, which is calculated by dividing GDP by total hours worked.

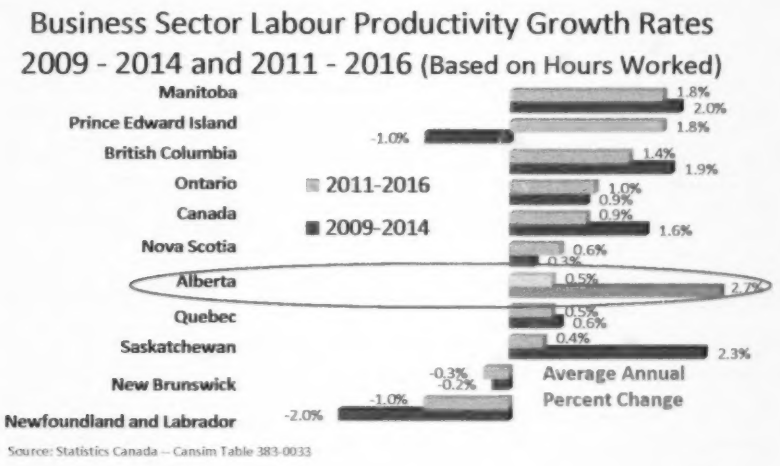
Why is labour productivity important? Labour productivity is the single most important determinant in maintaining and enhancing sustained prosperity for Albertans. Higher productivity growth will alleviate some of Alberta's future labour supply issues arising from an aging work force and decreasing labour force growth, and will also increase Alberta's international competitiveness and thereby secure long-term economic growth. The key drivers of labour productivity include skills and human capital, capital investment, and innovation.

Between 2011 and 2016, GDP in Alberta's business sector increased by 4.8% or 0.9% per year. This is sharply lower than the 33.0% growth that was registered for the five-year period ending in 2014 and this slowdown was largely the result of the 2015/2016 recession. Over the 2011 to 2016 period, the total number of hours worked increased by only 2.4% or 0.5% per year as a result of the average

[1] Excludes non-commercial sectors, such as public administration, healthcare and education, as well as private households

number of hours worked per job falling by 3.5% or 0.7% per year. (The number of jobs rose 6.1% or 1.2% per year.) As a result, labour productivity rose only 2.3% over the 5-year time period or 0.5% per year. By comparison, the labour productivity growth rate was a much higher 2.7% per year during the 2009 to 2014 period. Between 2011 and 2016, slightly less than one-half of the increase in GDP came as a result of increased labour productivity and just over half was the result of increased labour input.

While during the 2009 to 2014 period Alberta had the highest provincial labour productivity growth rate at 2.7% per cent, Alberta's ranking dropped to sixth place between 2011 and 2016 with an average annual rate of 0.5%, which was lower than the Canadian growth rate of 0.9% per year. In 2015, Alberta's productivity fell by 3.4% from 2014 and in 2016 it fell 1.1%, ranking Alberta last among the provinces for both years.

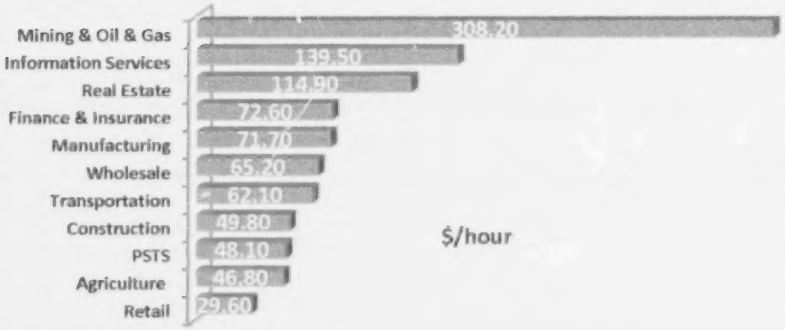


Source: Statistics Canada – Cansim Table 383-0033

To gain a better understanding of productivity you need to understand productivity at the sector level. Different sectors are experiencing different productivity performance, which helps us to better understand the success and challenges being experienced in productivity and where the focus needs to occur. This is why the focus of the remainder of this commentary is on productivity trends in Alberta's largest sectors.

Alberta's high productivity level is in large part the result of its large and capital-intensive oil and gas extraction sector. In 2016, the labour productivity level was $308 per hour in the mining and oil and gas sector because of very high levels in the oil and gas extraction sub-sector ($551 per hour). Levels in this capital-intensive industry are high as output (or GDP) per worker and per hour worked is very high in that industry. When excluding the mining and oil and gas sector Alberta's labour productivity level drops to $50.50 per hour, 10% higher than the Canadian average of $45.90. The $50.50 for the business sector excluding energy is much lower than the overall business sector productivity level of $70.20 in Alberta which in turn was 39% higher than the Canadian average. In other words, about three-quarters of the 39% difference between Alberta and Canada's business sector productivity levels is the result of Alberta's highly productive oil and gas sector.

Labour Productivity in Alberta Industries in 2016
(Real GDP per Hour Worked, in 2007 constant dollars)



Source: Statistics Canada – Cansim Table 383-0033
PSTS: Professional, Scientific and Technical Services

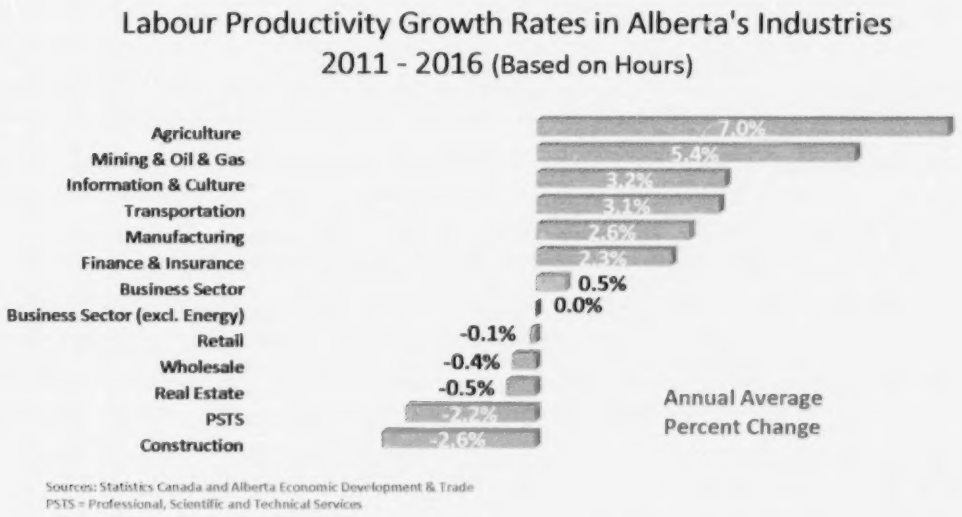
Although the mining and oil and gas sector still has the highest productivity level, its productivity declined sharply between 1999 and 2012: productivity in the oil and gas extraction sub-sector declined by about two-thirds during that period. There are a number of reasons for this decline. First, Alberta's conventional oil and gas resources were in decline and it took more effort to find and extract each additional barrel or gigajoule. Second, new oil sands projects will have employees on-site before production actually starts raising hours worked without any increase in GDP. Third, high oil prices made high cost, labour and capital intensive oil reservoirs more attractive.

In more recent years, productivity has improved markedly in the mining and oil and gas sector: between 2012 and 2016 this sector's productivity grew by 39% or 8.5% per year. The main reason for this turn-around is that a number of large oil sands projects started producing. Also, in 2015 and 2016 productivity rose sharply by 14% and 10%, respectively, as oil and gas companies, including oil and gas service companies, sharply reduced their work force. It is likely that this sector's productivity will continue to improve as more oil sands projects enter the production phase and as oil and gas producers and service companies find new ways to cut costs and improve productivity to deal with a much lower oil and gas price environment.

Between 2011 and 2016, the agricultural sector had the highest productivity growth with a rate of 7.0% per year, slightly higher than the 6.3% growth rate in Canada's agricultural sector. Farm consolidation and investment in machinery and equipment continue to drive productivity growth in this sector.

The mining and oil and gas sector had productivity growth of 5.4% per year as a result of strong output growth in the oil and gas extraction sub-sector and sharply reduced hours worked in the oil and gas services sub-sector. Information and culture (mainly telecommunication services) benefited from heavy investment in telecom equipment by telecom providers, such as cell phone companies, and had productivity growth of 3.2% per year. The manufacturing sector also had high productivity growth with a rate of 2.6% per year, higher than the 1.7% growth rate in Canada's manufacturing sector. High growth was registered in the globally competitive refinery products (13.5%), wood products (6.9%) and food processing (2.1%) sub-sectors. The current recession has led to sharply lower productivity in the

construction industry and the scientific and technical services (such as engineering services) sector, and to a lesser degree also in the real estate, wholesale and retail sectors.



In summary, Alberta's productivity level of $70.20 GDP per hour worked was the highest in the country and 39% higher than the Canadian average. Alberta's productivity growth had been weak historically, mainly because the oil and gas sector had sharply declining productivity between 1999 and 2012. Productivity growth had improved in 2013 and 2014 because of a pronounced turn-around in the oil and gas sector as a number of oil sands projects entered the production phase, but dropped sharply in 2015 and 2016 because of the recession. This caused Alberta's productivity growth to fall from a 2.7% rate of increase between 2009 and 2014 to a rate of only 0.5% between 2011 and 2016. Over the long term a skilled workforce, innovation and investment in machinery and equipment are expected to lead to renewed productivity growth in Alberta.

Note: labour productivity and many other economic indicators can be found on the Alberta Economic Dashboard at http://economicdashboard.alberta.ca/